

**Patent Claims:**

1. A high-pressure pump piston/cylinder unit, in which a pump cylinder (3) having a piston (2) which  
5 oscillates therein is provided in a housing (1), the piston (2) being operatively connected on one end side to a controlled drive (4), in order to vary a suction and compression stroke volume on the other end side, the head region, in the pump cylinder (3), with the  
10 result that the pressure of the fluid which is sucked into the pump cylinder (3) from a conveying flow inlet (9) is increased by the stroke of the piston (2), in order to make it available to a further supply element by means of a conveying valve (8), characterized in  
15 that a centering cone (20) in the form of a straight truncated cone having a circular base area (D) and top area (d) is formed integrally on the pump piston (2) on the head region, the maximum half diameter reduction ( $1/2 \times [D-d]$ ) of said centering cone (20) with respect  
20 to the diameter (D) of the piston skirt (2) being in a ratio of approximately 1:200, and the axial length (l) of said centering cone (20) being designed in relation to the axial length (L) of the entire piston skirt (2) in a ratio (l:L) of approximately 1:6.6.

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2. The high-pressure pump piston/cylinder unit as claimed in claim 1, characterized in that an insertion bevel (30) in the form of a further centering cone is positioned on the centering cone (20), the  
30 concentricity of the centering cone (20) and the insertion bevel (30) having a maximum tolerance of approximately 1  $\mu\text{m}$ .

3. The high-pressure pump piston/cylinder unit as  
35 claimed in claim 1 or 2, characterized by the configuration as an injection pump for a common rail fuel injection system of an internal combustion engine, the pump piston (2) being moved in the conveying direction on one side by a camshaft (4) which is driven

by the engine and being pressed back by a piston spring (5), the fluid being a fuel, in particular diesel fuel, which is made available to a common rail as a further supply element.